Section 3: Mississippi River Basin

Without question America's greatest river, the Mississippi, has made major contributions to the physical and economic growth of the nation. It is a navigation artery of great importance to the nation's transportation system, carrying an every-growing commerce.

Coursing through the heart of America, it supplies water for the cities and industries that have located along its banks. More and more the Mississippi's importance is emphasized as America continues to grow. This great river is truly one of the nation's outstanding assets.

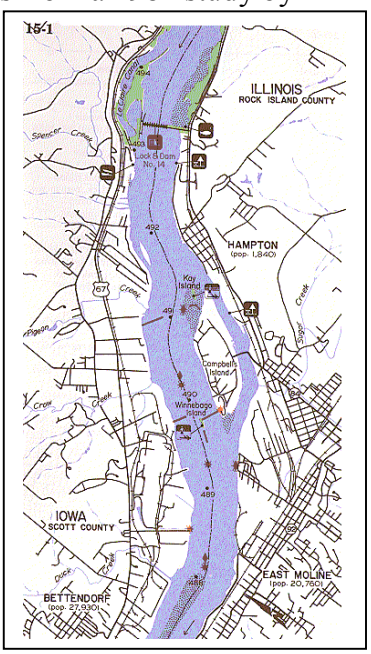
As stated in section one of this guide, the Mississippi River Basin is one of the largest and most complex river systems in the world. It drains 41 percent of the 48 contiguous states. The basin covers more than 1,245,000 square miles, includes all or parts of 31 states and two Canadian provinces, and roughly resembles a funnel that has its spout at the Gulf of Mexico. Waters from as far east as New York and as far west as Montana contribute to flows in the lower river.

The Mississippi River is one of the world's major river systems in size, habitat diversity, and biological productivity. It is the longest and largest river in North America, flowing 2,350 miles from its source at Lake Itasca in the Minnesota North Woods, through the mid continental United States to the Gulf of Mexico.

The Mississippi River and its adjacent forests and wetlands provide important habitat for fish and wildlife and include the largest continuous system of wetlands in North America. It is a river of diversity and it is home to a huge range of invertebrate species, mammals, birds and insects. It supports at least 260 species of fishes, 25% of all fish species in North America; forty percent of the nation's migratory waterfowl use the river corridor during their Spring and Fall migration; sixty percent of all North American birds (326 species) use the Mississippi River Basin as their migratory flyway. From Cairo, IL, upstream to Lake Itasca, there are 38 documented species of mussel. On the Lower Mississippi, there may be as many as 60 separate species of mussels.

The Upper Mississippi is host to more than 50 species of mammals; at least 145 species of amphibians and reptiles inhabit the Upper Mississippi River environs. The river supports an array of wetland, open-water, and floodplain habitats, including extensive habitats on national wildlife refuges.

The river provides the Gulf of Mexico with 90% of its fresh water, critical to the viability of that body's marine resources. Communities up and down the river use the Mississippi to obtain fresh water and to discharge their industrial and municipal waste. Close to15 million people rely on the Mississippi River or its tributaries in just the upper half of the basin (from Cairo, IL. to Minneapolis, MN). A frequently cited figure of 18 million people using the Mississippi River Watershed for water supply comes from a 1982 study by the Upper Mississippi River Basin Committee. The Environmental Protection Agency simply says that more than 50 cities rely on the Mississippi for daily water supply.



Human activities have greatly altered this river ecosystem. Most of the river and its floodplain have been extensively modified for commercial navigation and other human developments. Much of the watershed is intensively cultivated, and many tributaries deliver substantial amounts of sediment, nutrients, and pesticides to the river. Pollutants also enter the river from metropolitan and industrial areas.

For nearly 200 years agriculture has been the primary user of the basin lands, continually altering the hydrologic cycle and energy budget of the region. The value of the agricultural products and the huge agribusiness industry that has developed in the basin produces 92% of the nation's agricultural exports, 78% of the world's exports in feed grains (corn, barely, oats, sorghum, etc) and soybeans, and most of the livestock and hogs produced nationally. Sixty percent of all grain exported from the US is shipped via the Mississippi River through the Port of New Orleans and the Port of South Louisiana.

In measure of tonnage, the largest port in the world is located on the Mississippi River at LaPlace, LA. Between the two of them, the Ports of New Orleans and South Louisiana shipped more than 243 million tons of goods in 1999.

No river has played a greater part in the development and expansion of America than the Mississippi. In 1705 the first cargo was floated down the

river from the Indian country around the Wabash, now the states of Indiana and Ohio. This was a load of 15,000 bear and deer hides brought downstream for shipment to France.

Invention of the steamboat brought about a revolution in river commerce. The first steamboat to travel the Mississippi was the "New Orleans." The Mississippi River is the main stem of a network of inland navigable waterways that form a system of about 12,350 miles in length, not including the Gulf Intracoastal Waterway of 1,173 miles.

This heavy commercial traffic includes grains, coal and coke, petroleum products, sand and gravel, salt, sulphur and chemicals, and building materials among others. In addition, many pleasure craft from all parts of the country now use the Mississippi for vacation and travel.

Along the river's upper course shipping is interrupted by ice from December to March; thick, hazardous fogs frequently settles on the cold waters of the unfrozen sections during warm spells from December to May. In its upper course the river is controlled by numerous dams and falls.

Sources: Army Corps of Engineers and the National Park Service

Primary Upper Mississippi River Tributaries

Missouri Waterway

Nicknamed the “Big Muddy” for its heavy load of silt, the Missouri river is approximately 2,565 miles long, making it the longest river of the United States and the principal tributary of the Mississippi River. The Missouri River empties into the Mississippi River at an average of 76,300 cubic feet per second.

The length of the combined Missouri-Mississippi system from the headwaters of the Missouri to the mouth of the Mississippi is nearly 3,740 miles, making it the world's third longest river after the Nile and the Amazon. The Missouri River drains an area of approximately 580,000 square miles including 2,550 square miles in Canada.

Illinois Waterway

The Illinois Waterway is approximately 336 miles long and links Lake Michigan with the Mississippi River. This linkage makes it particularly valuable since it connects the Great Lakes with the Gulf of Mexico.

The Illinois Waterway extends from the mouth of the Chicago River, on Lake Michigan, following the Chicago Sanitary and Ship Canal, the lower Des Plaines River, and the Illinois River to the Mississippi at Grafton, Ill. Principal cargoes, carried chiefly by barges, are coal, petroleum, and grain products. Recreational areas have been developed along the waterway.

The Minnesota River

The Minnesota River is approximately 332 miles long, rising in Big Stone Lake at the western boundary of Minnesota and flowing southeast to Mankato, then northeast to the Mississippi just south of the city of Minneapolis.

Earlier called the St. Peter or St. Pierre, it was an important route of explorers and fur traders. The river follows the valley of the prehistoric River Warren, the outlet of Lake Agassiz.

Other Upper Mississippi River Tributaries

In addition to the primary Upper Mississippi River tributaries, there are other noteworthy tributaries that contribute to the Mississippi river's volume: Saint Croix, Chippawa, Wisconsin, Keokuk, Black, Iowa, Des Moines, and Rock rivers.

Defining Navigable Waters

Traditional navigable waters of the United States are defined to mean waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate or foreign commerce up to the head of navigation.

A determination of the navigability, once made, applies laterally over the entire surface of the water body to the ordinary high water mark (O.H.W.). The O.H.W. mark for inland fresh waters is the line on the shores established by physical characteristics such as a clear, natural line impressed on the bank; shelving, changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider characteristics of the surrounding areas.

Defining Inland Waters

For purposes of the Clean Water Act, Inland Waters of the United States are defined as follows:

1. The traditional "navigable waters of the United States" including adjacent wetlands;

2. All tributaries to "navigable waters of the United States" including adjacent wetlands (man-made drainage and irrigation ditches excavated on dry land are not considered "waters of the United States" under this definition);

3. Interstate waters and their tributaries, including adjacent wetlands;

4. Other waters of the United States, such as, isolated wetland and lakes, intermittent streams, prairie potholes, and other waters the degradation and destruction of which could affect interstate commerce.

"Wetlands are areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Source: Army Corps of Engineers